

## OIB - DC-8 10/16/14 Science Report

**Aircraft:**

[DC-8](#) ([See full schedule](#))

**Date:**

Thursday, October 16, 2014

**Mission:**

OIB

**Mission Location:**

Antarctica

**Mission Summary:**

### F01 Sea Ice ? Endurance

#### Accomplishments

- Low-altitude survey (1,500 ft AGL) over sea ice in the Weddell Sea.
- ATM, albedo, KT-19, snow, Ku-band, gravimeter, and DMS were operated on the survey lines.
- Ramp pass at Punta Arenas Airport at 1,500 ft AGL after takeoff (missed most of the target area).
- Ramp pass before landing at 1,500 ft AGL (too dark for DMS) but ATM and radars got good data.
- Satellite tracks: CryoSat-2 23972 (descending).
- Repeat Mission: 2012 and previous years.

Instrument	Operated	Data Volume	Instrument Issues/Comments
ATM	yes	93 GB	None. About 80% surface returns.
CAMBOT	yes	273 GB	None.
DMS	yes	77 GB	None. Collected 16,044 frames.
Snow Radar	yes	86 GB	None.
Ku-band Radar	yes	86 GB	None.
MCoRDS	no	N/A	Not operated due to sea ice mission.
KT-19	yes	20 MB	None.
Albedo	yes	6.6 GB	None.
Albedo camera	no	N/A	Not operational.
Gravimeter	yes	1.6 GB	None.

#### Mission Report (Michael Studinger, Mission Scientist)

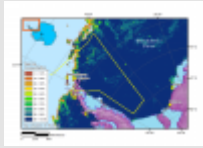
Today's mission represents a continuation of the IceBridge time series, repeating the "along shore" flight line (i.e. WP301a to WP302) flown in 2009 and 2010 and the Endurance flight line from 13 October 2011 and 7 November 2012. The western flight line (i.e. 301a to 302) is a repeat of a segment flown on 28 October 2010. The eastern flight line (37040-3704W) was adjusted to occupy a contemporaneous CryoSat-2 orbit. CryoSat-2 passed over the line at 10:41 Z, more than one hour before our takeoff time. The eastern flight line was adjusted to allow a 60 nm backtrack loop along the line, repeating a portion of the track to aid in the determination of sea ice drift rate. We flew the first pass at 1,500 ft AGL, the second pass at 2,000 ft AGL, and third pass at 2,700 ft AGL.

Yesterday, all 49 science targets had weather forecasts not suitable for flying a science mission. Today's forecast was slightly better and had a small opening in the Weddell Sea over the area of the Endurance mission. The decision to launch was difficult, mainly because of a lack of satellite imagery. We just got one MODIS image 15 minutes before the pre-flight brief that covered a small part of the survey line and decided to launch. We started on the eastern line, which was more difficult weather-wise. ATM reported about 80% of surface returns. At 21:00 Z, after finishing about 2/3 of the western survey line, we had to climb in order to return to Punta Arenas with enough fuel.

LiDAR data collection started 10/16/2014 14:48 UTC and ended at 21:02 UTC. In total we collected 6.2 hours of science data.

#### Images:

**Figure 1: Today's trajectory in yellow.**



[Read more](#)

#### Submitted by:

Michael Studinger on 10/17/14

#### Related Flight Report:

### DC-8 10/16/14

#### Flight Number:

150106

#### Payload Configuration:

Operation IceBridge 2014

#### Nav Data Collected:

Yes

#### Total Flight Time:

11 hours

#### Submitted by:

Frank Cutler on 10/17/14

#### Flight Segments:

<b>From:</b>	SCCI	<b>To:</b>	SCCI
<b>Start:</b>	10/16/14 12:19 Z	<b>Finish:</b>	10/16/14 23:21 Z
<b>Flight Time:</b>	11 hours		
<b>Log Number:</b>	<a href="#">158003</a>	<b>PI:</b>	Michael Studinger
<b>Funding Source:</b>	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
<b>Purpose of Flight:</b>	Science		
<b>Comments:</b>	Purpose of Flight: OIB 2014 Transit Science Flight ? Sea Ice Endurance Aircraft Status: Airworthy Sensor Status: All instruments operated Significant Issues: None Accomplishments: Takeoff at 289 12 19 47 Land 289 23 21 23 Perform ramp calibration pass at SCCI before starting transit south at FL350. Descend to 1500? to start southbound track under ICESAT track at 1454Z. Loop back along ICESAT track at 1723Z to fly north at 2000? for 60nm; start northbound run at 1728Z. Complete northerly track at 1742Z and then turn south to start southbound run at 1749Z and at 2800 ft. Complete southbound run at 1802Z and descend to 1500 ft to continue survey route. Complete ICESAT track at 1844Z and turn west to intercept northerly course start point at 1925Z. Remain at 1500 ft until 2100Z and then climb to FL400 for transit to SCCI. Perform ramp calibration pass at 2313Z at 1500 ft agl. Planned events: Continue science flights out of Punta Arenas, Chile		

#### Flight Hour Summary:

	<b>158003</b>
<b>Flight Hours Approved in SOFRS</b>	300
<b>Total Used</b>	292.1
<b>Total Remaining</b>	7.9

**158003 Flight Reports**

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining
<a href="#">10/06/14</a>	150101	Science	1.2	1.2	298.8
<a href="#">10/07/14 - 10/08/14</a>	150102	Science	5.2	6.4	293.6
<a href="#">10/08/14</a>	150103	Science	3.7	10.1	289.9
<a href="#">10/13/14</a>	150104	Transit	10.4	20.5	279.5
<a href="#">10/13/14</a>	150105	Transit	3.2	23.7	276.3
<a href="#">10/16/14</a>	150106	Science	11	34.7	265.3
<a href="#">10/18/14 - 10/19/14</a>	150107	Science	11.9	46.6	253.4
<a href="#">10/20/14</a>	150108	Science	11.7	58.3	241.7
<a href="#">10/23/14</a>	150109	Science	11.8	70.1	229.9
<a href="#">10/25/14</a>	150110	Science	11.4	81.5	218.5
<a href="#">10/26/14 - 10/27/14</a>	150111	Science	11.9	93.4	206.6
<a href="#">10/28/14</a>	150112	Science	11.5	104.9	195.1
<a href="#">10/29/14</a>	150113	Science	10.9	115.8	184.2
<a href="#">10/31/14</a>	150114	Maintenance	2.8	118.6	181.4
<a href="#">11/01/14</a>	150115	Maintenance	3	121.6	178.4
<a href="#">11/02/14</a>	150116	Science	10.9	132.5	167.5
<a href="#">11/03/14</a>	150117	Science	11.1	143.6	156.4
<a href="#">11/05/14</a>	150118	Science	11.4	155	145
<a href="#">11/06/14</a>	150119	Science	11.1	166.1	133.9
<a href="#">11/07/14</a>	150120	Science	10.9	177	123
<a href="#">11/08/14</a>	150121	Science	11.4	188.4	111.6
<a href="#">11/10/14</a>	150122	Science	11.2	199.6	100.4
<a href="#">11/11/14</a>	150123	Science	11.2	210.8	89.2
<a href="#">11/13/14</a>	150124	Science	11.4	222.2	77.8
<a href="#">11/14/14</a>	150125	Science	11.5	233.7	66.3
<a href="#">11/15/14</a>	150126	Science	11.2	244.9	55.1
<a href="#">11/16/14</a>	150127	Science	11.1	256	44
<a href="#">11/21/14</a>	150128	Science	11.2	267.2	32.8
<a href="#">11/22/14</a>	150129	Science	10.8	278	22
<a href="#">11/24/14</a>	150130	Transit	2.9	280.9	19.1
<a href="#">11/25/14 - 11/26/14</a>	150131	Transit	11.2	292.1	7.9

*Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.*

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Page Last Updated: April 22,  
2017

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